



**Brief Report on a Pilot Study: Mental Health Management Among Central European Anatomists – Exploring the Link Between Mental Health and Teaching Style**

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Complete List of Authors:	Gács, Boróka; PTE-ÁOK, Department of Behavioral Sciences Mathew, Thomas; University of Cambridge, Department of Physiology, Development and Neuroscience Brassett, Cecilia; University of Cambridge Department of Physiology Development and Neuroscience, Department of Physiology, Development and Neuroscience Nagy, András; PTE-ÁOK, Anatomy Department Horváth-Sarródi, Andrea; PTE-ÁOK, Department of Public Health Medicine
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4 **European Anatomists – Exploring the Link Between Mental Health and Teaching Style**  
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11 Boróka, Gács, PhD, Department of Behavioural Sciences, Medical School, UP

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13  
14 Thomas, Mathew, Department of Physiology, Development and Neuroscience, University of  
15 Cambridge, Cambridge, UK  
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17  
18 Cecilia, Brassett, MD, PhD, Department of Physiology, Development and Neuroscience,  
19 University of Cambridge, Cambridge, UK  
20

21  
22  
23 András, Nagy, MD, PhD, Department of Anatomy, Medical School, UP  
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25 Andrea, H Sarródi, MD, Department of Public Health Medicine, Medical School, UP  
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31

32 Corresponding author:  
33

34 Boróka, Gács, PhD, Department of Behavioural Sciences, Medical School, UP  
35

36  
37 Szigeti str. 12, Pécs, 7622  
38

39 [borok.gacs@aok.pte.hu](mailto:borok.gacs@aok.pte.hu)  
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55 The data that support the findings of this study are available from the corresponding author  
56 upon reasonable request.  
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### Contributors' note

Boróka Gács, PhD is a research associate professor at the Institute of Behavioral Sciences at the Medical School of the University of Pécs. She obtained her first degree in Psychology, followed by specialized training in crisis intervention. She completed her doctoral studies at the Doctoral School of Theoretical Medical Sciences at the Medical School of the University of Pécs. She is also a member of the Division of Medical Education Development and Communication and serves as the professional leader of the Psychological Consultation Services. Within these roles, she often organizes psychoeducational training and workshops for both students, teachers and staff. Since 2020, she has been leading the mental well-being project within the Faculty Wellbeing Strategy. In line with her professional identity, her research primarily focuses on the field of mental health among medical students and staff.

Thomas T. Mathew, MuDr, is currently a resident surgeon in oral and maxillofacial surgery, working towards his second degree in dentistry. Primarily a clinician, he also serves as a junior demonstrator of anatomy for first- and second-year medical students at the University of Cambridge. He has provided supervisions in Head and Neck Anatomy at Lucy Cavendish College, UC. His special interests include medical education and paediatrics, as reflected in his career. He was President of the Cambridge Anatomy Demonstrators Society and has organised national surgical courses to support surgeons preparing for the MRCS exam, with a strong emphasis on anatomy. Thomas graduated medicine from Charles University in the Czech Republic and with his past and presents experiences provide LEANbody with a unique and informed perspective on anatomy education.

Professor Cecilia Brassett came to the UK from Hong Kong in 1981 to study medicine at Downing College, University of Cambridge. In 2009, she was appointed the University Clinical Anatomist at the Department of Physiology, Development and Neuroscience, where she was responsible for organising anatomy teaching for the Cambridge medical course. She is currently the Teaching Professor of Human Anatomy and is involved in a number of collaborative anatomy research projects with clinical colleagues. In addition to her departmental duties, she is a Fellow of Magdalene College, where she is Director of Studies for Preclinical Medicine, Undergraduate Tutor and Deputy Senior Tutor. She is a Councillor of both the Anatomical Society and the British Association of Clinical Anatomists, and Vice-President of the Institute of Anatomical Sciences. She is an external examiner for a number of universities in the UK and is on the Court of Examiners for the Royal College of Surgeons.

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3 Andras D. Nagy, M.D. Ph.D. Habil. is an associate professor of Human Anatomy, Histology  
4 and Embryology, and is a representative of the English Program Committee at the University  
5 of Pécs Medical School. He teaches first-year and second-year medical students and is involved  
6 in admission interviews of international applicants. He gained expertise in group teaching in  
7 Pécs, Hungary and in Cambridge, UK. His research experience in Chronobiology comes from  
8 international research fellowships at Cambridge University, UK and at Kyushu University,  
9 Japan. Andras was the Partner Expert representing the University of Pécs in an Erasmus+ KA2  
10 project 'CLILMED' working with colleagues from Karolinska Institutet, Sweden and with  
11 Jagiellonian University, Poland. CLILMED project results help combine high quality contents  
12 of key pre-clinical subjects with developing contextual literacy skills, using CLIL  
13 methodology. In the LEANbody project, Andras is responsible for the vision, mission, strategic  
14 planning, and long-term goal setting in his role as the Project Coordinator.

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24 Andrea, Horváth-Sarródi, MD is an assistant professor at the Department of Public Health  
25 Medicine, where she teaches medical students in Public Health courses. She conducts training  
26 sessions, participates in health promotion programs, and offers individual consultations. As the  
27 coordinator of the YourLife program, she supports the faculty's efforts to improve the health  
28 of both staff and students. She maintains an active relationship with students, and her current  
29 research focuses on the mental health of medical students. She has also led multiple training  
30 sessions at some of the major workplaces in the region, aiming to reduce workplace stress and  
31 improve communication effectiveness.  
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3 **Title: Brief Report on a Pilot Study: Mental Health Management Among Central**  
4 **European Anatomists – Exploring the Link Between Mental Health and Teaching Style**  
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9 **Abstract**  
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11 Mental health plays a critical role in maintaining high teaching standards, especially in a  
12 demanding field such as medicine, for which anatomy teaching is a foundational subject. This  
13 pilot study aimed to assess the mental health, burnout levels, stressors, and teaching styles of  
14 educators among Central European Anatomists from Masaryk University, Brno, Czech  
15 Republic, University of Zagreb Medical Faculty, Croatia, University of Pécs Medical School,  
16 Hungary. A total of 16 teachers participated in the survey, providing insights into their mental  
17 well-being and attitudes toward their working environment. Results indicated that while the  
18 general mental well-being of participants was within a normal range, significant stressors, such  
19 as excessive workload, time pressure, and interpersonal communication challenges, were  
20 prevalent. Burnout was present in one-third of participants, with disengagement being the most  
21 commonly reported symptom. The study also explored teaching styles, revealing a tendency  
22 toward autonomy-supportive approaches. However, a small but significant correlation between  
23 controlling teaching styles and burnout was found, suggesting that autonomy-supportive  
24 practices may benefit both teachers' well-being and student outcomes. Participants suggested  
25 various interventions, such as pedagogical training and stress management, to alleviate stress  
26 and improve their work-life balance. The findings emphasize the need for targeted interventions  
27 to support educators' mental health, reduce burnout, and foster a more positive teaching  
28 environment.  
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46 **Keywords:** mental health, burnout, autonomy support, controlling teaching style, anatomy  
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## Practice points:

- Educators' mental well-being may impact their teaching effectiveness and students' motivation.
- Burnout has a high prevalence among educators that can lead to reduced classroom engagement and poor mental health.
- Major stress factors among anatomy teachers include communication with colleagues, high expectations, and excessive workload.
- Adopting autonomy-supportive teaching styles may not only benefit students but also protect educators from burnout.
- Interventions such as pedagogical training, communication skills, and recognizing student mental health needs, are essential for reducing stress and preventing burnout.

## Introduction

When considering mental health, illnesses and problems they are often listed, as depression and other mood disorders, anxiety, substance use disorders and the consequent disability of the working population (WHO, 2016). Globally, enormous financial costs can be incurred through absenteeism, reduced productivity, and increased turnover in workplaces (Dimoff et al., 2021), with significant costs in both healthcare and pharmaceutical therapy. At a workplace, several determinants of mental health can be taken into account, such as physical environmental factors, health and safety, organizational and leadership characteristics, employee involvement, collegial relationships, recognition of achievement, and work-life balance (Day & Randell, 2014; Kelloway et al., 2023).

Burnout is also prevalent in high-stress professions, including healthcare and teaching. Physical symptoms can include chronic fatigue, headaches, sleep disturbances, and gastrointestinal issues, while mental symptoms include decreased well-being, anxiety, depression, irritability, and difficulty concentrating. Behavioral symptoms can also occur, including reduced performance or withdrawal from professional and social interactions. Several factors contribute to burnout among educators, such as excessive work hours and insufficient support from supervisors and colleagues; restricted control over work-related decisions; and the need to manage students' emotional and behavioral issues (Maslach et al., 2001).

In the case of Anatomy Departments, the above list can be extended by stressors such as working with cadavers, strong hierarchy and high expectations of academic success. There is also some evidence from studies of stress levels of medical teachers (Jain et al., 2020) that it is not the teaching itself that causes stress, but other stressors (e.g. administrative work, professional jealousy, family life) seem to be significant. It is also crucial to mention that the mental well-being of professors themselves is a significant factor affecting students' motivation and performance (Madigan and Kim, 2020). Anatomy departments are considered to function as a tertiary socialization environment (Nagy and Székely, 2012). For students, the departments play a major role in professional socialization as the students learn to develop professionalism from observing their professors. Thus, a deterioration in their teachers' mental health and/or burnout will have a negative impact on their ability to provide educational instruction and their capacity to manage classroom behaviors (Jennings and Greenberg, 2009). A stressed and fatigued teacher can show reduced empathy and patience, thus creating a tense classroom atmosphere. Exposure to a negative learning environment can contribute to students' mental

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3 health issues, including anxiety, depression, and low self-esteem potentially affecting their  
4 long-term educational aspirations and attitudes (Campbell et al., 2022).  
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7 Furthermore, a teacher's motivating style is an important classroom feature, as students of  
8 autonomy-supportive teachers, compared to those of controlling teachers, benefit in several  
9 important ways, including greater classroom engagement, achievement, and psychological  
10 well-being (Reeve et al., 2014).  
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17 In higher education institutions, it is vital to find effective solutions that promote student  
18 engagement and reduce dropout rates. To achieve this, maintaining students' and educators'  
19 mental health is essential, as it directly contributes to upholding high quality teaching standards  
20 (Ohadomere & Ogamba, 2020).  
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25 Our report summarises the findings of a survey conducted to assess various aspects of  
26 mental health among selected Central European anatomists who participated in the LEANbody  
27 ERASMUS+ project. The aim of this study was to explore the mental well-being of anatomy  
28 teachers in Central Europe, identify the most common sources of stress and the levels of  
29 burnout, as well as to examine the teaching styles used within the department. Through this  
30 pilot study, we also sought to determine whether any correlation exists between mental well-  
31 being, burnout and preferred teaching styles. These insights into educators' mental health and  
32 well-being may help develop targeted interventions in the future.  
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## 42 **Methods**

### 43 *Participants*

44 A total of 16 teachers (6 males, 10 females aged between 27 and 60;  $M = 39.4$ ,  $SD = 10.1$ ) were  
45 recruited for the study and completed the questionnaires. On average, the participants had been  
46 teaching at the institution for 13.9 years ( $SD = 10.4$ ), ranging from 6 to over 30 years. Seven  
47 individuals had taken an extended "break" (e.g., maternity leave, sabbatical, study abroad, etc.).  
48 All respondents were partner anatomists in the LEANbody consortium, sharing a mutual  
49 interest in exploring and understanding the strengths and weaknesses of their working  
50 environment in accordance with the principles stated in the [Declaration of Helsinki](#). These 16  
51 participants represented a convenience sample from the altogether around 50 in total from all 3  
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3 departments, offering a focused sample for initial analysis while still representing the diversity  
4 in terms of experience and perspectives.  
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### 6 7 *Procedure*

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9 The research was conducted with the help of the Medical School of University of Pécs, within  
10 the framework of LEANbody ERASMUS+ project. The data were collected using an online  
11 format in English between June and September 2024. Completion of the online questionnaire  
12 took approximately 10 minutes. Participation in the research was voluntary and written  
13 informed consent was obtained from all respondents. Participants could terminate completion  
14 of the questionnaire at any time without providing any explanations, and in such cases, the data  
15 that had been collected would be deleted. The data collected during the survey were stored on  
16 a secure computer with a code.  
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### 23 24 *Measurements*

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26 Socio-demographic data such as years of teaching, age and gender were used in the analysis.  
27 Participants were also asked if they had taken an extended "break" (e.g., maternity leave,  
28 sabbatical, study abroad, etc.). Additionally, for the following questions where multiple-choice  
29 options were provided, they were given the opportunity to write in additional responses: '*What*  
30 *causes you the most stress at work?*' (Possible answers included preparing for the class, giving  
31 lectures and exercises, communicating with students, communication with colleagues, meeting  
32 expectations related to work, appraisals, and career progression, research work, publication  
33 activity, conducting examinations, and working with cadavers), '*What interventions or changes*  
34 *would make your job easier?*' (The options provided included pedagogical training, developing  
35 communication skills such as conflict management and assertive communication, clearer  
36 responsibilities, not having to lecture, research-related training, receiving more feedback from  
37 supervisors, training on time management techniques, training on work-life balance, learning  
38 effective stress management techniques, and recognizing students' mental health needs).  
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49 The Mini Oldenburg Questionnaire (MOLBI; Thun et al., 2014;) was used to measure burnout  
50 rates. MOLBI is a 10-item scale, which measures the two aspects of the burnout. Its first aspect  
51 is exhaustion, which is physical and emotional tiredness connected to work. The second aspect  
52 is disengagement, which contains a lack of motivation to work and intensive depersonalization.  
53 Responses are rated on a 4-point Likert-scale, ranging from 1 ('totally disagree') to 4 ('totally  
54 agree'). High scores on both subscales indicate burnout. According to the suggestion by  
55 Peterson and colleagues (2008), individuals belong to the burnout group if the average of their  
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3 responses in the exhaustion dimension is greater than 2.25 and the average of their responses in  
4 the disengagement dimension is also greater than 2.1. The reliability (i.e., Cronbach's  $\alpha$ ) of the  
5 scales in the healthcare workers' sample is: Exhaustion = 0.790; Disengagement = 0.762 (Ádám  
6 et al., 2020).  
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10 Mental well-being was measured with the Short Warwick-Edinburgh Mental Well-being Scale  
11 (SWEMWBS). The scale assesses mental well-being using a 5-point Likert scale (1 = "None  
12 of the time," 2 = "Rarely," 3 = "Some of the time," 4 = "Often," 5 = "All of the time") on seven  
13 questions, with an overall outcome score ranging from 7 to 35. Higher scores on the  
14 SWEMWBS are indicative of better mental well-being. The mean score for the general  
15 population in the UK is 23.5 (SD=3.9). with 15% of the population expected to have a score of  
16 >27.4. The cut point was therefore set at 27.5 for a high level of well-being. Similarly, 15%  
17 of the population can be expected to have a score <19.6, so the cut point was set at 19.5 for a  
18 low level of well-being (Fat et al., 2016; Tennant et al., 2007).  
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26 Given the lack of a suitable self-reporting measure of teaching style, the teaching scenario  
27 method of Reeve et al. (year) was selected for this study. This is described in detail in  
28 Supplementary Materials (S1, S2). The 263-word (in English) autonomy-supportive teaching  
29 scenario presented an approach to instruction that featured adopting the students' perspective,  
30 inviting students' thoughts, feelings, and supporting autonomous self-regulation, while also  
31 nurturing inner motivational resources, providing explanatory rationales, using informational  
32 language, displaying patience, and accepting negative affect; while the 262-word controlling  
33 scenario presented an approach to instruction that featured adopting only the teacher's  
34 perspective, intruding into and trying to change students' thoughts, feelings, and actions, and  
35 pressuring students to think, feel, and behave in a teacher-prescribed way, while also offering  
36 extrinsic incentives, neglecting explanatory rationales, relying on pressuring language, pushing  
37 students toward prescribed courses of action, and asserting power to overcome complaints. Both  
38 teaching scenarios were followed by the same single question to assess the self-described  
39 motivating style: '*Does this approach to teaching describe what you do on a daily basis to*  
40 *motivate and engage your students?*' Teachers were asked to answer this question twice—once  
41 for each of the two scenarios—using a scale from 1 ("No, not at all") to 7 ("Yes, very much").  
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### 55 **Data analysis**

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57 For data analysis, we used SPSS 28.0 to apply descriptive statistics based on the previously  
58 mentioned cut points. The value given for the autonomy-supportive motivating style was  
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3 divided by the value given for the controlling style, providing a ratio that reflects the relative  
4 balance between the two approaches. Additionally, Spearman's correlation analysis was  
5 performed for continuous variables to explore potential relationships between teaching style  
6 with burnout and mental well-being.  
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## 10 11 12 13 **Results**

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15 The primary sources of stress were communicating with colleagues (n=3), meeting expectations  
16 (n=2), and publication activity (n=3). Additional stress factors included preparing for the class,  
17 giving lectures, research work, and cadaveric dissection. Moreover, excessive workload and  
18 time pressure were also highlighted as negative influences on well-being (see Figure 1).  
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23 *insert Figure 1 here*  
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25 In parallel with these stress factors, teachers suggested several interventions that they believed  
26 would help alleviate their stress. The most frequently suggested interventions were  
27 'pedagogical training' (n=6); 'recognizing students' mental health problems and having the  
28 tools to deal with them' (n=4) and 'developing communication skills' (n=4). Clearer  
29 responsibilities and training on work-life balance were also mentioned (n=3 each). Finally,  
30 research-related training (n=2), more feedback from supervisors (n=1), training on time  
31 management techniques (n=2) and learning effective stress management techniques (n=1) were  
32 also selected as effective interventional strategies. Interestingly, only one respondent felt that  
33 eliminating the need to give lectures would be an effective intervention.  
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41 The lowest score on the SWEMWBS was 21, and the highest was 35, with a mean score of  
42 26.63 (SD = 3.42), indicating a relatively normal level of well-being among participants.  
43 Notably, the item 'feeling relaxed' was the lowest rated, with 25% of participants reporting that  
44 they 'never' or 'rarely' felt relaxed. Although no one demonstrated low well-being (score <19.6),  
45 five teachers reported high well-being (score >27.4).  
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51 Five participants exhibited burnout in both dimensions (disengagement and emotional  
52 exhaustion), while an additional 9 participants reported being disengaged without showing  
53 signs of emotional exhaustion. Two participants showed no symptoms of burnout at all (see  
54 Figure 2). The most frequently reported symptom was "feeling tired before work," with 37.5%  
55 of participants strongly agreeing with this statement.  
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3 Comparing the two distinct teaching styles, autonomy-supportive and controlling, the survey  
4 results revealed that among the participants, 3 teachers tend to use both teaching styles equally.  
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6 11 teachers predominantly adopt an autonomy-supportive style, while 2 teachers primarily  
7 employ a controlling style.  
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10 Spearman correlation revealed a small significant correlation between the controlling teaching  
11 style and burnout exhaustion dimension ( $\rho = .518$ ;  $p = .04$ ). This finding suggests that teachers  
12 who predominantly employ a controlling approach in their classrooms — characterized by strict  
13 adherence to instructions, close monitoring of student behavior, and maintaining high levels of  
14 authority — are more likely to experience higher levels of burnout.  
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## 22 **Discussion**

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24 The first aim of this study was to explore the mental well-being and level of burnout among  
25 Central European anatomists and identify the commonest sources of stress. Interestingly, the  
26 results from the SWEMWBS well-being scale indicated a generally normal level of well-being  
27 among the participants. However, one-quarter of the participants reported rarely or never  
28 feeling relaxed, which suggests that even with an average level of well-being, there are  
29 significant stressors impacting the day-to-day lives of educators. No participants demonstrated  
30 low well-being according to the SWEMWBS scale, indicating that despite the pressures of the  
31 role, many educators are still able to maintain a healthy mental state. On the other hand, burnout,  
32 particularly disengagement, was present in a significant portion of the sample, with one-third  
33 of the participants experiencing burnout in both dimensions. The symptom most frequently  
34 reported was "feeling tired before work," which suggests that fatigue and a lack of motivation  
35 may be early indicators of burnout. Aligned with these, the primary sources of stress reported  
36 by teachers point to both interpersonal and professional pressures. Interestingly, only one of the  
37 respondents felt that eliminating the need to give lectures would be an effective intervention,  
38 suggesting that teaching itself was not viewed as a primary source of stress.  
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51 Within the teaching context of this pilot study, our aim was also to determine whether any  
52 correlation exists between mental well-being, burnout and preferred teaching style. The  
53 findings suggest a tendency towards the autonomy-supportive approach among the majority of  
54 teachers. This preference indicates that these educators are more likely to engage students by  
55 supporting their autonomy, which has been shown to enhance student motivation, engagement,  
56 and overall psychological well-being (Reeve et al., 2014). However, the presence of a few  
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3 teachers who lean towards a controlling style, or who balance both styles equally, highlights an  
4 area for potential improvement. It may not only be beneficial from the students' perspective,  
5 but the survey results also revealed a small, but significant correlation between the controlling  
6 teaching style and burnout. This finding may suggest that teachers who predominantly employ  
7 a controlling approach in their classrooms are more likely to experience higher levels of  
8 burnout. The small number of participants limits our ability to draw definitive conclusions, but  
9 these preliminary findings suggest that encouraging autonomy-supportive practices may not  
10 only benefit students by creating a more engaging and motivating learning environment but  
11 may also support teachers' mental health and well-being (Bardach et al., 2022; Fox et al., 2023).

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13 The range of suggested interventions highlights the need for a multifaceted approach to  
14 supporting teachers, addressing not only professional development but also mental health and  
15 workload management. Such training could help teachers refine their methods and adopt best  
16 practices for an engaging and supportive classroom environment. There are several examples  
17 of management-led interventions in the literature, such as the implementation of work-life  
18 balance policies, reduction in administrative tasks, encouraging social support, increasing staff  
19 participation in decision-making, introducing mindfulness sessions and stress management  
20 workshops (Fernández et al., 2016; Memish et al., 2017; Ohadomere & Ogamba, 2021;).  
21 Implementing these interventions can lead to a more supportive working environment,  
22 ultimately benefiting both educators and their students.  
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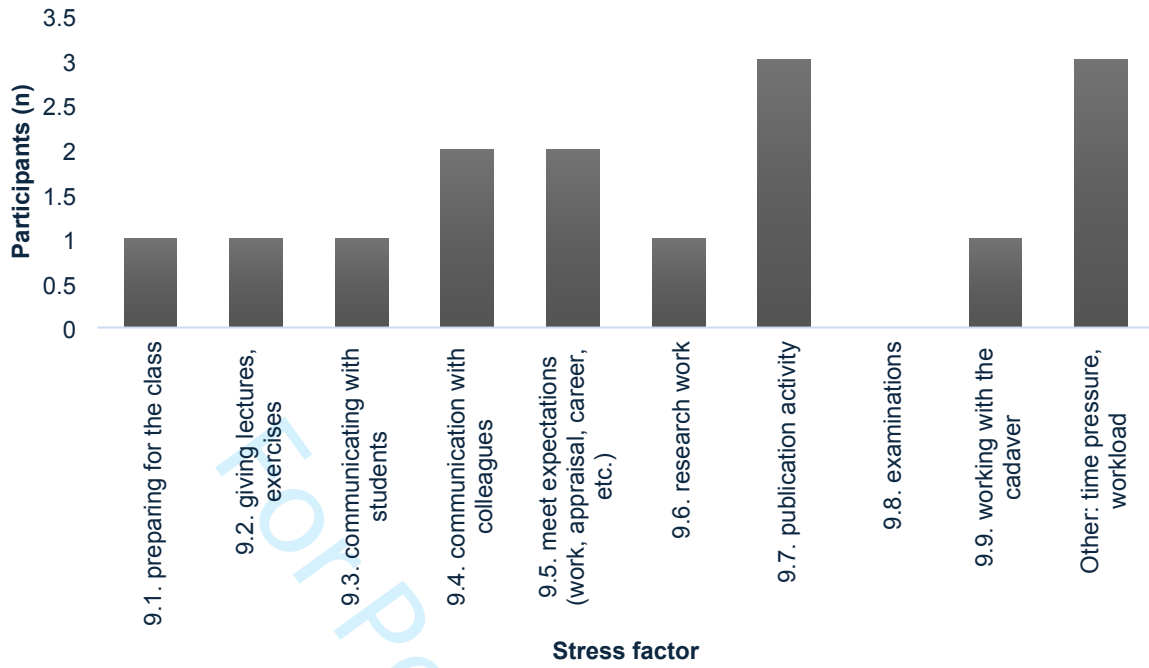


Figure 1. Distribution of stress factors related to anatomy teaching among participants.

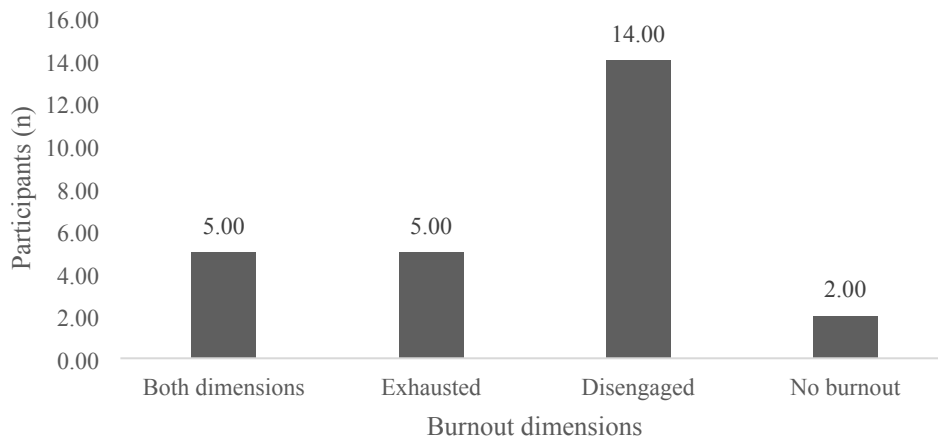


Figure 2. Distribution of levels of burnout among participants.



## Supplementary Materials

### S1: autonomy-supportive teaching scenario

"As you plan and prepare for an upcoming lesson, you think about what your students want and need. You wonder if students will find the lesson interesting and relevant to their lives. To support their interest and valuing of the lesson, you prepare some resources in advance so that they can see how interesting and how important the lesson truly is. To better engage students in the lesson, you create a challenging activity for students to do, and you create some engaging questions to pique their interest. As the class period begins, you invite your students' input and suggestions before finalizing the day's lesson plan, letting your students know that you welcome and value their thoughts, ideas, and suggestions. To motivate students, you take the time to explain why the lesson is important, how it aligns with their personal goals, and why it is a truly worthwhile thing to do. When students encounter difficulties and setbacks, you display patience- giving them the time and space they need to figure out the problem for themselves. When students complain and show little or no initiative, you acknowledge and accept their negative feelings, telling them that you understand why they might feel that way, given the difficulty and complexity of the lesson. As you talk with your students, you resist any pressuring language such as "you should", "you must", and "you have to." Instead, you communicate your understanding and encouragement. Overall, you take your students' perspective, welcome their thoughts, feelings, and actions into the flow of the lesson, and support their developing capacity for autonomous self-regulation."

### S2: controlling scenario

"As you plan and prepare for an upcoming lesson, you think about what needs to be covered. You make a step-by-step plan of what students are supposed to do and when they are supposed to do it. As the class period begins, you tell students what to do, monitor their compliance closely, and when needed make it clear that there is no time to waste. To keep students on-task, you make sure they follow your directions, obey their assignments, and basically do what they are supposed to do while not doing what they are not supposed to do. When students stray off task, you correct them saying, "You should be working now", "act responsibly", and "there is a time for work and there is a time for play-now is a time for work." To motivate students, you offer little incentives and privileges. When students encounter difficulties and setbacks, you intervene quickly to show and tell them the right way to do it. When they do what you tell them to do and when they produce right answers, you smile and give your praise. When they don't do what you tell them to do and when they misbehave, you make it clear that you are in charge and that it is your responsibility to make sure that they act responsibly and complete their work. Overall, you take a "no-nonsense" attitude and make sure students do what you tell them to do, even if it means you need to push and pressure them into doing what they are supposed and required to do."